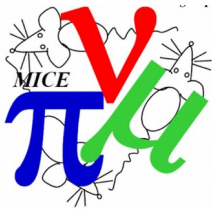


# **Performance of the MICE diagnostic systems**

S. Wilbur - P. Franchini

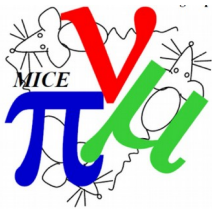
MICE CM 50  
27<sup>th</sup> February 2018



# Summary

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- There is a **system paper** being prepared that include an Instrumentation section (only hardware description)
  - Author contributions will be used as a draft
- Some **MICE Notes** can be promoted as paper material
- Several other undergoing **analysis** that need to find a home
- Can be one massive paper or more than one
- Define some uniformity in the studies (e.g. common set of runs, cuts, plots, ...)

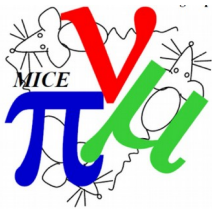


# Main topics

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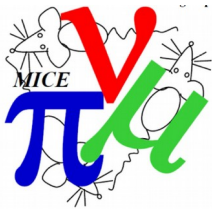
- Detectors
- Detector alignment
- Beam optics
- PID
- Track matching
- Cooling channel magnets
- Absorbers

# TOFs



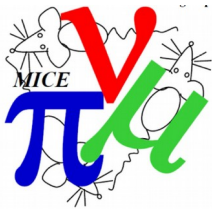
- Proposed authors:
  - Maurizio: hardware description
  - Viktor and Scott:
    - performances (few issues to be solved)
    - stability from Step I till Step IV
    - importance of the TOFs in many analysis

# Cherekov

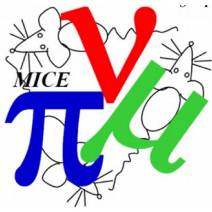


- Proposed authors:
  - Lucien and David: hardware description
  - Old efficiency plots: Tanaz has some code

# KL



- Proposed author:
  - Domizia: hardware description
  - Old efficiency plots: Tanaz has some code

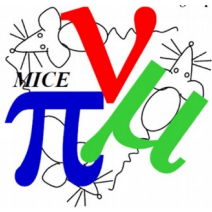


# Tracker

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- Proposed authors:
  - Melissa, Paul K., Chris H.
- Performance of the tracker during Step IV
- Tracker resolution in magnetic field

# EMR

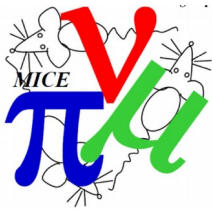


- Author: Francois
- Paper based on Step I data already published
- Update the studies with Step IV data?

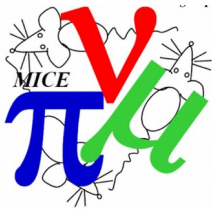


# Detector alignment

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- Author: Francois
- MICE Note being reviewed by Paul K.

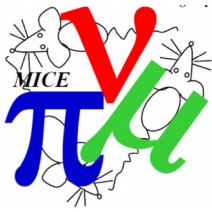


# Beam line optics

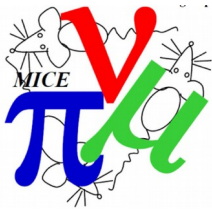
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- Tom: study of the target pion generation
- Melissa: diffuser study
- General MC validation

# PID



- Proposed authors:
  - Melissa, Scott



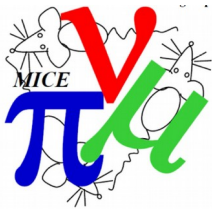
# Track matching

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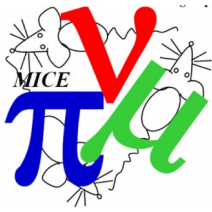
- Proposed authors:
  - Melissa, Chris R.
- Globals are been used in several analysis
  - How are they used
  - Common characteristics and performances

# Cooling channel magnets

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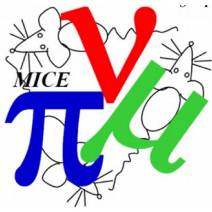
- Joe: magnets field mapping
  - Improvement of the MAUS model
  - Systematic studies
- Beam based magnets alignment: ?



# Absorber

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- Ajits study on the LiH absorber to improve the MC
- Scott study on the energy loss to validate the MC



# Future plans

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- Start writing a structure and let the author contribute
- Opportunity to write down
- Paper repository:  
<https://github.com/pfranchini/MICE-systems-performance-paper>
- First draft ready by the next workshop in Glasgow